

AF24-MFT95 US



Proportional damper actuator, Spring Return Fail-Safe, 24 V for use with Honeywell® electronic Series 90, or a 0 to 135Ω input



- Torque min. 133 in-lb
- Control fixed, 0 to 135Ω input, or Honeywell series 90 (fixed)
- Feedback 2 to 10 VDC (DEFAULT)

Application

For proportional modulation of dampers and control valves in HVAC systems. The AF24-MFT95 US provides mechanical spring return operation for reliable fail-safe application.

Default/Configuration

Default parameters for 0 to 135Ω Input applications of the AF24-MFT95 US actuator are assigned during manufacturing. If required, custom versions of the actuator can be ordered. However the control input cannot be modified via MFT-Handy tool or PC-software. The parameters noted in the Technical Data table are variable.

These parameters can be changed by three means:

- Pre-set configurations from Belimo
- Custom configurations from Belimo
- Configurations set by the customer using the MFT-Handy® or the MFT-Actuate™ PC software application.

Operation

The AF24-MFT95 US actuator provides 95° of rotation and is provided with a graduated position indicator showing 0° to 95°. The actuator will synchronize the 0° mechanical stop or the physical damper or valve mechanical stop and use this point for its zero position during normal control operations. A unique manual override allows the setting of any actuator position within its 95° of rotation with no power applied. This mechanism can be released physically by the use of a crank supplied with the actuator. When power is applied the manual override is released and the actuator drives toward the fail-safe position.

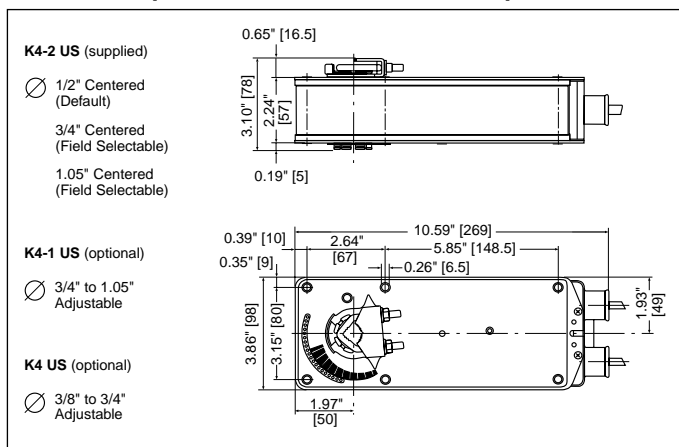
The actuator uses a brushless DC motor which is controlled by an Application Specific Integrated Circuit (ASIC) and a microprocessor. The microprocessor provides the intelligence to the ASIC to provide a constant rotation rate and to know the actuator's exact position. The ASIC monitors and controls the brushless DC motor's rotation and provides a Digital Rotation Sensing (DRS) function to prevent damage to the actuator in a stall condition. The position feedback signal is generated without the need for mechanical feedback potentiometers using DRS. The actuator may be stalled anywhere in its normal rotation without the need of mechanical end switches.

The AF24-MFT95 US is mounted directly to control shafts up to 1.05" diameter by means of its universal clamp and anti-rotation bracket. A crankarm and several mounting brackets are available for damper applications where the actuator cannot be direct coupled to the damper shaft. The spring return system provides minimum specified torque to the application during a power interruption. The AF24-MFT95 US actuator is shipped at +5° (5° from full fail-safe) to provide automatic compression against damper gaskets for tight shut-off.

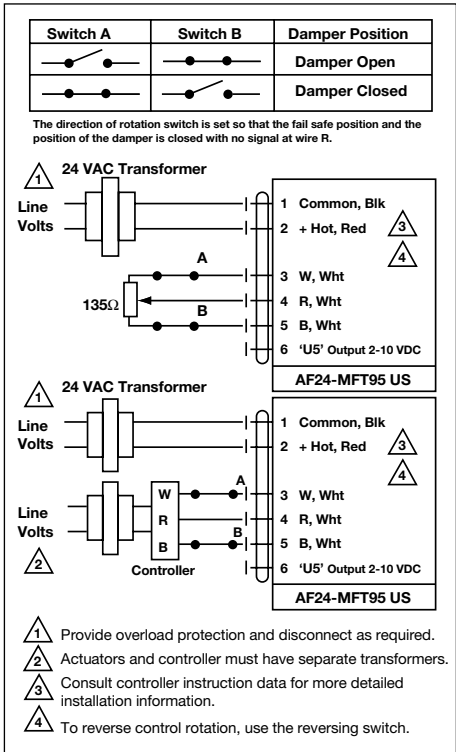
Technical Data	AF24-MFT95 US
Power supply	24 VAC ± 20% 50/60 Hz 24 VDC ± 10%
Power consumption	running: 6 W ; holding: 2 W
Transformer sizing	10 VA (class 2 power source)
Electrical connection	3 ft, 18 GA appliance cable 1/2" conduit connector
Overload protection	electronic throughout 0 to 95° rotation
Operating range WRB (Not selectable via MFT)	0 to 135Ω Honeywell electronic series 90, or a 0 to 135 Ω input
Feedback output U*	2 to 10 VDC, 0.5 mA max
Mech. angle of rotation*	95°, adjustable 35° to 95° w/ZDB-AF2
Torque	133 in-lb [15 Nm] constant
Direction of rotation*	spring: reversible with cw/ccw mounting motor: reversible with built-in switch
Position indication	visual indicator, 0° to 95° (0° is spring return position)
Manual override	3mm hex crank (shipped w/actuator)
Running time motor*	150 seconds constant
Running time spring	<20 sec spring return fail safe position
Angle of Rotation Adaptation*	Off (Default)
Override control*	Min. (Min Position) = 0% - ZS (Mid. Position) = 50% - Max. (Max. Position) = 100%
Humidity	5 to 95% RH non-condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA type 2 / IP54
Housing material	zinc coated metal
Agency listings	UL 873 listed, CE, CSA C22.2 No. 24 certified
Noise level	max. 45 dB (A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	6.0 lbs (2.7 kg.)

* Variable when configured with MFT options

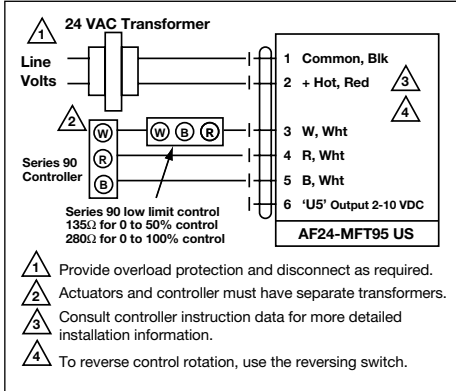
Dimensions [All numbers in brackets are in millimeters.]



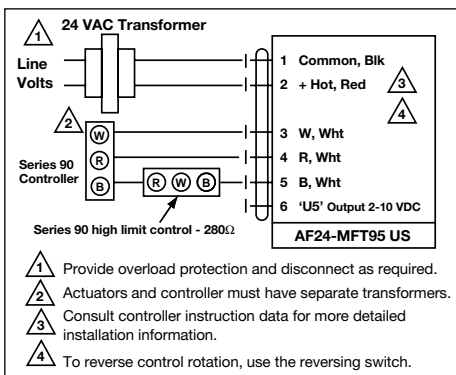
Proportional Potentiometric Control



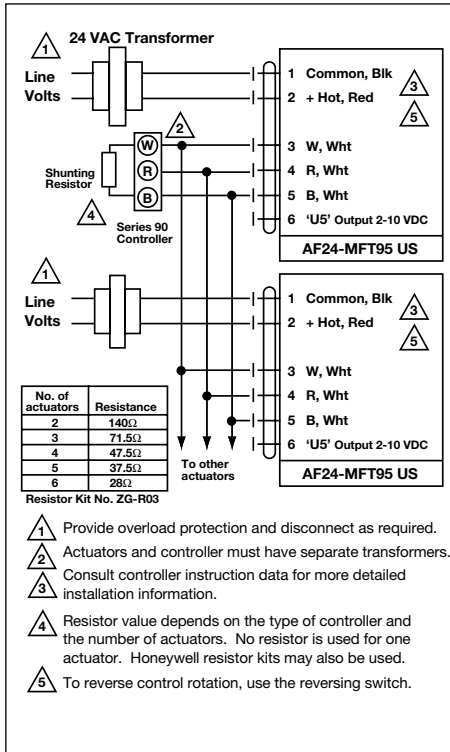
Override of AF24-MFT95 US



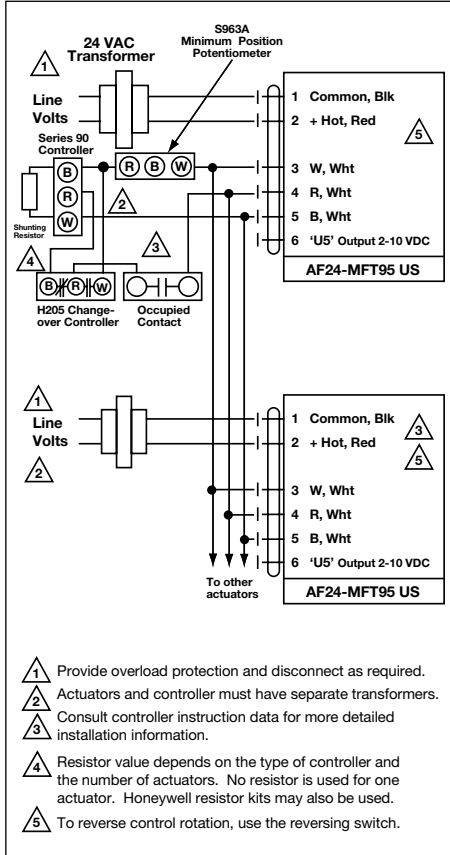
AF24-MFT95 US used with a Series 90 controller and a Series 90 low limit control



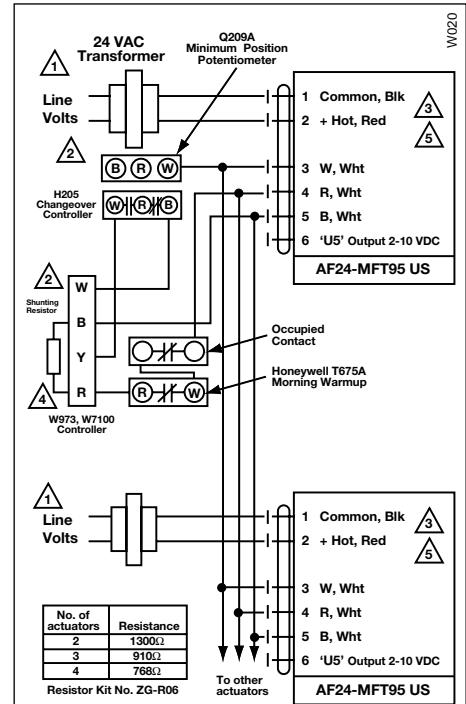
AF24-MFT95 US used with a Series 90 controller and a Series 90 high limit control



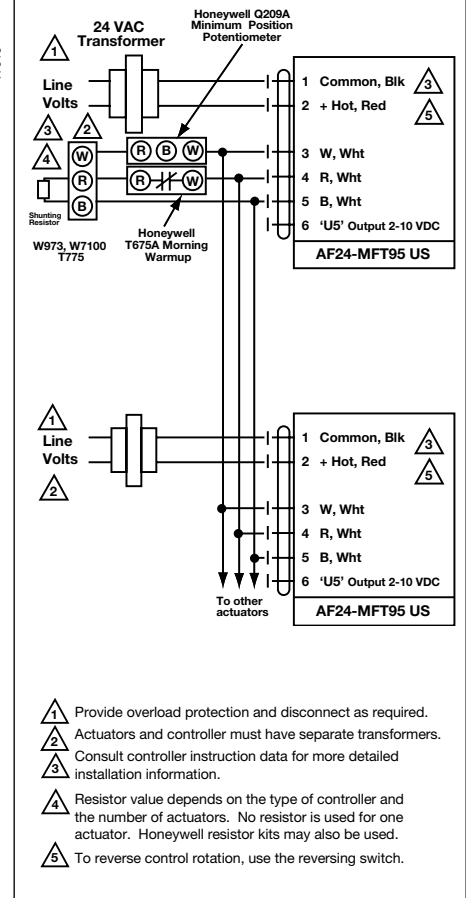
Wiring multiple actuators to a Series 90 controller.



Wiring multiple actuators to a Series 90 controller using a minimum position potentiometer.



Used with the W973 and W7100 controllers.



Typical wiring diagrams for multiple actuators used with the W973, W7100 and T775 controllers.